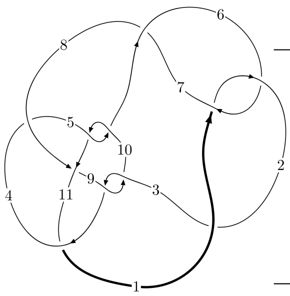
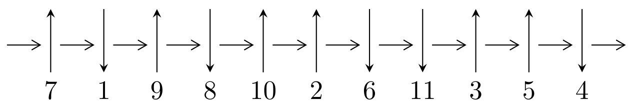
$11a_{228}$ $(K11a_{228})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$2,6 \xrightarrow[c_6]{} 7 \xrightarrow[c_7]{} 8 \xrightarrow[c_1]{} 1 \xrightarrow[c_2]{} 3,10 \xrightarrow[c_5]{} 5 \xrightarrow[c_{10}]{} 11 \xrightarrow[c_4]{} 4 \xrightarrow[c_9]{} 9 \twoheadrightarrow c_3, c_8, c_{11}$$

Ideals for irreducible components[2]of $X_{\mathbf{par}}$

$$I_1^u = \langle -15u^{25} - 53u^{24} + \cdots + 4b + 140,\ -29u^{25} - 269u^{24} + \cdots + 8a - 580,\ u^{26} + 7u^{25} + \cdots + 12u + 8\rangle$$

$$\begin{aligned}I_2^u = \langle &8.51292 \times 10^{18}a^5u^8 - 1.75570 \times 10^{19}a^4u^8 + \cdots + 2.60029 \times 10^{20}a - 4.53756 \times 10^{20},\\ &- 2u^8a^4 - 7u^8a^3 + \cdots - 9a + 6,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1\rangle\end{aligned}$$

$$\begin{aligned}I_3^u = \langle &u^{11} + 2u^9 + 4u^7 - u^6 + 5u^5 - u^4 + 3u^3 - u^2 + b + 2u,\\ &- u^{13} - u^{12} - 3u^{11} - 2u^{10} - 7u^9 - 3u^8 - 9u^7 - 2u^6 - 9u^5 + u^4 - 6u^3 + u^2 + a - 2u + 2,\\ &u^{14} + 3u^{12} + 7u^{10} - u^9 + 11u^8 - 2u^7 + 12u^6 - 3u^5 + 10u^4 - 2u^3 + 5u^2 - u + 1\rangle\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 94 representations.

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $I_1^u = \langle -15u^{25} - 53u^{24} + \cdots + 4b + 140,\ -29u^{25} - 269u^{24} + \cdots + 8a - 580,\ u^{26} + 7u^{25} + \cdots + 12u + 8\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 3.62500u^{25} + 33.6250u^{24} + \cdots + 49.2500u + 72.5000 \\ \frac{15}{4}u^{25} + \frac{53}{4}u^{24} + \cdots + 5u - 35 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{63}{8}u^{25} + \frac{371}{8}u^{24} + \cdots + \frac{197}{4}u + 24 \\ -\frac{25}{4}u^{25} - \frac{161}{4}u^{24} + \cdots - \frac{97}{2}u - 37 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{41}{8}u^{25} + \frac{335}{8}u^{24} + \cdots + \frac{119}{2}u + 85 \\ 6u^{25} + \frac{53}{2}u^{24} + \cdots + \frac{45}{2}u - 41 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{9}{8}u^{25} + \frac{61}{8}u^{24} + \cdots + \frac{59}{4}u + 1 \\ -\frac{1}{4}u^{25} - \frac{13}{4}u^{24} + \cdots - \frac{25}{2}u - 9 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -3.37500u^{25} - 27.3750u^{24} + \cdots - 38.7500u - 55.5000 \\ -\frac{21}{4}u^{25} - \frac{103}{4}u^{24} + \cdots - 27u + 27 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -3.37500u^{25} - 27.3750u^{24} + \cdots - 38.7500u - 55.5000 \\ -\frac{21}{4}u^{25} - \frac{103}{4}u^{24} + \cdots - 27u + 27 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -12u^{25} - 78u^{24} - 301u^{23} - 809u^{22} - 1723u^{21} - 2988u^{20} - 4360u^{19} - 5258u^{18} - 5163u^{17} - 3679u^{16} - 1188u^{15} + 1603u^{14} + 3423u^{13} + 3726u^{12} + 2364u^{11} + 364u^{10} - 1475u^9 - 2219u^8 - 2061u^7 - 1330u^6 - 696u^5 - 201u^4 - 18u^3 - 43u^2 - 116u - 58$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{26} + 7u^{25} + \cdots + 12u + 8$
c_2, c_7	$u^{26} + 9u^{25} + \cdots + 48u + 64$
c_3, c_5, c_9 c_{10}	$u^{26} + 8u^{24} + \cdots + 2u + 1$
c_4, c_{11}	$u^{26} - u^{25} + \cdots - 3u + 1$
c_8	$u^{26} - 21u^{25} + \cdots - 6912u + 512$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{26} + 9y^{25} + \cdots + 48y + 64$
c_2, c_7	$y^{26} + 17y^{25} + \cdots + 60160y + 4096$
c_3, c_5, c_9 c_{10}	$y^{26} + 16y^{25} + \cdots - 2y + 1$
c_4, c_{11}	$y^{26} + 9y^{25} + \cdots + 19y + 1$
c_8	$y^{26} - 5y^{25} + \cdots + 196608y + 262144$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.837651+0.572406I$ $a=\ \ 0.835566+0.354168I$ $b=-0.531846-0.873998I$	$1.84430+3.12249I$	$4.20356-5.13534I$
$u=-0.837651-0.572406I$ $a=\ \ 0.835566-0.354168I$ $b=-0.531846+0.873998I$	$1.84430-3.12249I$	$4.20356+5.13534I$
$u=\ \ 0.881347+0.183622I$ $a=-0.573452-0.801837I$ $b=\ \ 0.396890+1.190540I$	$-3.96770+6.65430I$	$-0.65787-6.33935I$
$u=\ \ 0.881347-0.183622I$ $a=-0.573452+0.801837I$ $b=\ \ 0.396890-1.190540I$	$-3.96770-6.65430I$	$-0.65787+6.33935I$
$u=\ \ 0.297455+0.831482I$ $a=\ \ 0.191314+0.562862I$ $b=\ \ 0.504051-0.077620I$	$-0.64079+1.97179I$	$1.39932-4.26013I$
$u=\ \ 0.297455-0.831482I$ $a=\ \ 0.191314-0.562862I$ $b=\ \ 0.504051+0.077620I$	$-0.64079-1.97179I$	$1.39932+4.26013I$
$u=-0.899623+0.665417I$ $a=-0.786099-0.972145I$ $b=\ \ 0.63545+1.32692I$	$-1.14356+10.71300I$	$0.33526-5.40937I$
$u=-0.899623-0.665417I$ $a=-0.786099+0.972145I$ $b=\ \ 0.63545-1.32692I$	$-1.14356-10.71300I$	$0.33526+5.40937I$
$u=-0.800652+0.839278I$ $a=\ \ 1.244260+0.159972I$ $b=-0.866677+0.161865I$	$5.83701-0.85262I$	$7.15266+0.82662I$
$u=-0.800652-0.839278I$ $a=\ \ 1.244260-0.159972I$ $b=-0.866677-0.161865I$	$5.83701+0.85262I$	$7.15266-0.82662I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.201343 + 1.171450I$ $a = 0.634705 - 1.046330I$ $b = -0.44754 - 1.35708I$	$-8.67640 + 10.06980I$	$-5.88892 - 7.31379I$
$u = 0.201343 - 1.171450I$ $a = 0.634705 + 1.046330I$ $b = -0.44754 + 1.35708I$	$-8.67640 - 10.06980I$	$-5.88892 + 7.31379I$
$u = -0.093471 + 1.199340I$ $a = -0.073401 + 0.980820I$ $b = 0.239568 + 0.837324I$	$-4.09225 + 1.31670I$	$5.84188 - 2.64117I$
$u = -0.093471 - 1.199340I$ $a = -0.073401 - 0.980820I$ $b = 0.239568 - 0.837324I$	$-4.09225 - 1.31670I$	$5.84188 + 2.64117I$
$u = -0.781122 + 0.922042I$ $a = -0.938819 - 0.875292I$ $b = 0.846844 + 0.063440I$	$5.58632 - 5.07870I$	$6.80297 + 4.99584I$
$u = -0.781122 - 0.922042I$ $a = -0.938819 + 0.875292I$ $b = 0.846844 - 0.063440I$	$5.58632 + 5.07870I$	$6.80297 - 4.99584I$
$u = 0.439531 + 1.186270I$ $a = -0.784277 + 0.187768I$ $b = -0.232529 + 1.203110I$	$-7.23748 - 1.85191I$	$-5.27925 + 3.38649I$
$u = 0.439531 - 1.186270I$ $a = -0.784277 - 0.187768I$ $b = -0.232529 - 1.203110I$	$-7.23748 + 1.85191I$	$-5.27925 - 3.38649I$
$u = -0.698499 + 1.080440I$ $a = -1.60109 - 0.59030I$ $b = 0.513688 - 0.994028I$	$0.31911 - 8.88087I$	$0.68625 + 10.27634I$
$u = -0.698499 - 1.080440I$ $a = -1.60109 + 0.59030I$ $b = 0.513688 + 0.994028I$	$0.31911 + 8.88087I$	$0.68625 - 10.27634I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.749005 + 1.057380I$ $a = 2.09827 + 0.24225I$ $b = -0.65034 + 1.38923I$	$-2.3566 - 16.8090I$	$-1.24843 + 9.63879I$
$u = -0.749005 - 1.057380I$ $a = 2.09827 - 0.24225I$ $b = -0.65034 - 1.38923I$	$-2.3566 + 16.8090I$	$-1.24843 - 9.63879I$
$u = -0.932872 + 0.931207I$ $a = -0.472447 + 0.573546I$ $b = 0.053787 - 0.847257I$	$3.75978 - 3.40349I$	$-4.66696 + 3.91131I$
$u = -0.932872 - 0.931207I$ $a = -0.472447 - 0.573546I$ $b = 0.053787 + 0.847257I$	$3.75978 + 3.40349I$	$-4.66696 - 3.91131I$
$u = 0.473220 + 0.303991I$ $a = 0.975471 + 0.017379I$ $b = -0.461342 - 0.420051I$	$0.898620 + 0.817519I$	$6.81953 - 4.33053I$
$u = 0.473220 - 0.303991I$ $a = 0.975471 - 0.017379I$ $b = -0.461342 + 0.420051I$	$0.898620 - 0.817519I$	$6.81953 + 4.33053I$

II. $I^u_2 = \langle 8.51\times10^{18}a^5u^8 - 1.76\times10^{19}a^4u^8 + \cdots + 2.60\times10^{20}a - 4.54\times10^{20},\ -2u^8a^4 - 7u^8a^3 + \cdots - 9a + 6,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^3 \\ u^5+u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ -0.0501691a^5u^8 + 0.103468a^4u^8 + \cdots - 1.53242a + 2.67411 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.0104893a^5u^8 + 0.300793a^4u^8 + \cdots - 1.19290a + 4.00869 \\ 0.0757787a^5u^8 + 0.141035a^4u^8 + \cdots + 2.09572a - 3.59647 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.0191376a^5u^8 + 0.302267a^4u^8 + \cdots + 0.192227a - 0.0413771 \\ 0.0842588a^5u^8 - 0.190487a^4u^8 + \cdots - 1.41715a + 1.39892 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.0505824a^5u^8 - 0.230088a^4u^8 + \cdots + 0.271748a + 0.149238 \\ 0.0624037a^5u^8 + 0.372711a^4u^8 + \cdots + 1.33349a - 2.66894 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.117790a^5u^8 + 0.236604a^4u^8 + \cdots + 0.487696a - 0.491448 \\ 0.144583a^5u^8 + 0.0202877a^4u^8 + \cdots - 1.10453a + 2.79806 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.117790a^5u^8 + 0.236604a^4u^8 + \cdots + 0.487696a - 0.491448 \\ 0.144583a^5u^8 + 0.0202877a^4u^8 + \cdots - 1.10453a + 2.79806 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1848468244326230304}{24240666886441401379}u^8a^5 + \frac{7769797230450955500}{24240666886441401379}u^8a^4 + \cdots - \frac{8673214963844774432}{24240666886441401379}a + \frac{19845048819820497205 8}{24240666886441401379}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$(u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1)^6$
c_2, c_7	$(u^9 + 3u^8 + 8u^7 + 13u^6 + 17u^5 + 17u^4 + 12u^3 + 6u^2 + u - 1)^6$
c_3, c_5, c_9 c_{10}	$u^{54} - u^{53} + \cdots + 2026u + 167$
c_4, c_{11}	$u^{54} - 3u^{53} + \cdots - 88u + 7$
c_8	$(u^3 + u^2 - 1)^{18}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)^6$
c_2, c_7	$(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)^6$
c_3, c_5, c_9 c_{10}	$y^{54}+39y^{53}+\cdots-756660y+27889$
c_4, c_{11}	$y^{54}-13y^{53}+\cdots-772y+49$
c_8	$(y^3-y^2+2y-1)^{18}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.140343 + 0.966856I$ $a = -0.789673 + 0.879642I$ $b = 0.197045 + 0.055587I$	$-3.69411 + 0.73475I$	$-5.00524 + 1.18338I$
$u = -0.140343 + 0.966856I$ $a = 0.80190 + 1.19171I$ $b = -0.51815 + 1.57690I$	$-7.83169 - 2.09337I$	$-11.53450 + 4.16283I$
$u = -0.140343 + 0.966856I$ $a = 0.32744 + 1.40287I$ $b = 0.303816 + 1.064500I$	$-3.69411 + 0.73475I$	$-5.00524 + 1.18338I$
$u = -0.140343 + 0.966856I$ $a = 0.158893 + 0.006810I$ $b = -1.104640 + 0.259039I$	$-3.69411 - 4.92150I$	$-5.00524 + 7.14228I$
$u = -0.140343 + 0.966856I$ $a = -1.80300 - 1.22850I$ $b = 0.077708 - 1.286090I$	$-7.83169 - 2.09337I$	$-11.53450 + 4.16283I$
$u = -0.140343 + 0.966856I$ $a = -0.45237 - 2.31709I$ $b = 0.271297 - 1.159590I$	$-3.69411 - 4.92150I$	$-5.00524 + 7.14228I$
$u = -0.140343 - 0.966856I$ $a = -0.789673 - 0.879642I$ $b = 0.197045 - 0.055587I$	$-3.69411 - 0.73475I$	$-5.00524 - 1.18338I$
$u = -0.140343 - 0.966856I$ $a = 0.80190 - 1.19171I$ $b = -0.51815 - 1.57690I$	$-7.83169 + 2.09337I$	$-11.53450 - 4.16283I$
$u = -0.140343 - 0.966856I$ $a = 0.32744 - 1.40287I$ $b = 0.303816 - 1.064500I$	$-3.69411 - 0.73475I$	$-5.00524 - 1.18338I$
$u = -0.140343 - 0.966856I$ $a = 0.158893 - 0.006810I$ $b = -1.104640 - 0.259039I$	$-3.69411 + 4.92150I$	$-5.00524 - 7.14228I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.140343-0.966856I$ $a=-1.80300+1.22850I$ $b=\ \ 0.077708+1.286090I$	$-7.83169+2.09337I$	$-11.53450-4.16283I$
$u=-0.140343-0.966856I$ $a=-0.45237+2.31709I$ $b=\ \ 0.271297+1.159590I$	$-3.69411+4.92150I$	$-5.00524-7.14228I$
$u=-0.628449+0.875112I$ $a=\ \ 0.942165+0.601863I$ $b=\ \ 0.02614+1.49190I$	$-5.43132-2.45442I$	$-8.69159+2.91298I$
$u=-0.628449+0.875112I$ $a=-1.262370-0.229556I$ $b=\ \ 0.173732+0.700808I$	$-1.29373-5.28254I$	$-2.16232+5.89242I$
$u=-0.628449+0.875112I$ $a=\ \ 1.08622+1.35134I$ $b=-0.923600-0.879737I$	$-1.293730+0.373705I$	$-2.16232-0.06647I$
$u=-0.628449+0.875112I$ $a=-1.52683+0.97782I$ $b=-0.10677-1.91340I$	$-5.43132-2.45442I$	$-8.69159+2.91298I$
$u=-0.628449+0.875112I$ $a=\ \ 2.31670+0.58603I$ $b=-0.073681+0.905589I$	$-1.293730+0.373705I$	$-2.16232-0.06647I$
$u=-0.628449+0.875112I$ $a=-2.58190-0.51535I$ $b=\ \ 0.762688-1.044840I$	$-1.29373-5.28254I$	$-2.16232+5.89242I$
$u=-0.628449-0.875112I$ $a=\ \ 0.942165-0.601863I$ $b=\ \ 0.02614-1.49190I$	$-5.43132+2.45442I$	$-8.69159-2.91298I$
$u=-0.628449-0.875112I$ $a=-1.262370+0.229556I$ $b=\ \ 0.173732-0.700808I$	$-1.29373+5.28254I$	$-2.16232-5.89242I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.628449 - 0.875112I$ $a = 1.08622 - 1.35134I$ $b = -0.923600 + 0.879737I$	$-1.293730 - 0.373705I$	$-2.16232 + 0.06647I$
$u = -0.628449 - 0.875112I$ $a = -1.52683 - 0.97782I$ $b = -0.10677 + 1.91340I$	$-5.43132 + 2.45442I$	$-8.69159 - 2.91298I$
$u = -0.628449 - 0.875112I$ $a = 2.31670 - 0.58603I$ $b = -0.073681 - 0.905589I$	$-1.293730 - 0.373705I$	$-2.16232 + 0.06647I$
$u = -0.628449 - 0.875112I$ $a = -2.58190 + 0.51535I$ $b = 0.762688 + 1.044840I$	$-1.29373 + 5.28254I$	$-2.16232 - 5.89242I$
$u = 0.796005 + 0.733148I$ $a = 0.713362 - 0.505363I$ $b = -0.502274 + 1.249400I$	$2.46068 - 4.16429I$	$2.79385 + 3.68120I$
$u = 0.796005 + 0.733148I$ $a = 1.238440 + 0.048506I$ $b = -0.648327 - 0.667502I$	$2.46068 + 1.49195I$	$2.79385 - 2.27770I$
$u = 0.796005 + 0.733148I$ $a = 0.765974 - 1.136570I$ $b = -0.118171 + 0.986357I$	$-1.67691 - 1.33617I$	$-3.73542 + 0.70175I$
$u = 0.796005 + 0.733148I$ $a = -0.181650 + 0.241266I$ $b = 0.388994 - 0.951181I$	$2.46068 + 1.49195I$	$2.79385 - 2.27770I$
$u = 0.796005 + 0.733148I$ $a = -0.81516 + 1.60536I$ $b = 0.78711 - 1.20948I$	$-1.67691 - 1.33617I$	$-3.73542 + 0.70175I$
$u = 0.796005 + 0.733148I$ $a = -1.80729 + 0.56948I$ $b = 1.266580 + 0.200850I$	$2.46068 - 4.16429I$	$2.79385 + 3.68120I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.796005 - 0.733148I$ $a = \ \ 0.713362 + 0.505363I$ $b = -0.502274 - 1.249400I$	$2.46068 + 4.16429I$	$2.79385 - 3.68120I$
$u = \ \ 0.796005 - 0.733148I$ $a = \ \ 1.238440 - 0.048506I$ $b = -0.648327 + 0.667502I$	$2.46068 - 1.49195I$	$2.79385 + 2.27770I$
$u = \ \ 0.796005 - 0.733148I$ $a = \ \ 0.765974 + 1.136570I$ $b = -0.118171 - 0.986357I$	$-1.67691 + 1.33617I$	$-3.73542 - 0.70175I$
$u = \ \ 0.796005 - 0.733148I$ $a = -0.181650 - 0.241266I$ $b = \ \ 0.388994 + 0.951181I$	$2.46068 - 1.49195I$	$2.79385 + 2.27770I$
$u = \ \ 0.796005 - 0.733148I$ $a = -0.81516 - 1.60536I$ $b = \ \ 0.78711 + 1.20948I$	$-1.67691 + 1.33617I$	$-3.73542 - 0.70175I$
$u = \ \ 0.796005 - 0.733148I$ $a = -1.80729 - 0.56948I$ $b = \ \ 1.266580 - 0.200850I$	$2.46068 + 4.16429I$	$2.79385 - 3.68120I$
$u = \ \ 0.728966 + 0.986295I$ $a = -0.387701 + 0.616336I$ $b = \ \ 0.688581 - 0.531471I$	$1.68745 + 4.25680I$	$1.08656 - 2.93390I$
$u = \ \ 0.728966 + 0.986295I$ $a = \ \ 1.337780 - 0.309242I$ $b = -0.286685 - 1.108740I$	$1.68745 + 4.25680I$	$1.08656 - 2.93390I$
$u = \ \ 0.728966 + 0.986295I$ $a = \ \ 1.29786 - 1.11923I$ $b = -1.368850 + 0.117343I$	$1.68745 + 9.91305I$	$1.08656 - 8.89280I$
$u = \ \ 0.728966 + 0.986295I$ $a = -2.09945 + 0.52391I$ $b = \ \ 0.462600 + 1.307620I$	$1.68745 + 9.91305I$	$1.08656 - 8.89280I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.728966 + 0.986295I$ $a = -2.12891 - 0.45451I$ $b = 0.202583 + 1.039430I$	$-2.45013 + 7.08493I$	$-5.44271 - 5.91335I$
$u = 0.728966 + 0.986295I$ $a = 2.32561 + 0.07270I$ $b = -0.87070 - 1.32457I$	$-2.45013 + 7.08493I$	$-5.44271 - 5.91335I$
$u = 0.728966 - 0.986295I$ $a = -0.387701 - 0.616336I$ $b = 0.688581 + 0.531471I$	$1.68745 - 4.25680I$	$1.08656 + 2.93390I$
$u = 0.728966 - 0.986295I$ $a = 1.337780 + 0.309242I$ $b = -0.286685 + 1.108740I$	$1.68745 - 4.25680I$	$1.08656 + 2.93390I$
$u = 0.728966 - 0.986295I$ $a = 1.29786 + 1.11923I$ $b = -1.368850 - 0.117343I$	$1.68745 - 9.91305I$	$1.08656 + 8.89280I$
$u = 0.728966 - 0.986295I$ $a = -2.09945 - 0.52391I$ $b = 0.462600 - 1.307620I$	$1.68745 - 9.91305I$	$1.08656 + 8.89280I$
$u = 0.728966 - 0.986295I$ $a = -2.12891 + 0.45451I$ $b = 0.202583 - 1.039430I$	$-2.45013 - 7.08493I$	$-5.44271 + 5.91335I$
$u = 0.728966 - 0.986295I$ $a = 2.32561 - 0.07270I$ $b = -0.87070 + 1.32457I$	$-2.45013 - 7.08493I$	$-5.44271 + 5.91335I$
$u = -0.512358$ $a = 0.969937 + 0.067507I$ $b = -0.426633 - 0.992210I$	$-0.71223 + 2.82812I$	$4.16210 - 2.97945I$
$u = -0.512358$ $a = 0.969937 - 0.067507I$ $b = -0.426633 + 0.992210I$	$-0.71223 - 2.82812I$	$4.16210 + 2.97945I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.512358$ $a=-0.74455+1.43727I$ $b=\ \ 0.604275+0.087401I$	$-0.71223-2.82812I$	$4.16210+2.97945I$
$u=-0.512358$ $a=-0.74455-1.43727I$ $b=\ \ 0.604275-0.087401I$	$-0.71223+2.82812I$	$4.16210-2.97945I$
$u=-0.512358$ $a=\ \ 0.29857+2.09521I$ $b=\ \ 0.235325-1.259830I$	-4.84981	$-2.36716+0.I$
$u=-0.512358$ $a=\ \ 0.29857-2.09521I$ $b=\ \ 0.235325+1.259830I$	-4.84981	$-2.36716+0.I$

III.

$$\boldsymbol{I^u_3 = \langle u^{11}+2u^9+\cdots+b+2u,\ -u^{13}-u^{12}+\cdots+a+2,\ u^{14}+3u^{12}+\cdots-u+1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^3 \\ u^5+u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{13}+u^{12}+\cdots+2u-2 \\ -u^{11}-2u^9-4u^7+u^6-5u^5+u^4-3u^3+u^2-2u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{13}+u^{12}+\cdots+u+2 \\ u^{12}+3u^{10}+7u^8-u^7+10u^6-2u^5+10u^4-3u^3+7u^2-u+1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{13}-u^{12}+\cdots-7u^2-3 \\ -u^{13}-u^{12}+\cdots-u-1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{13}+u^{12}+\cdots+2u+1 \\ u^{13}+u^{12}+2u^{11}+3u^{10}+4u^9+6u^8+4u^7+9u^6+2u^5+9u^4+7u^2+1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{13}+3u^{11}+\cdots+3u-3 \\ -u^{11}-2u^9-4u^7+u^6-5u^5+u^4-3u^3-2u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{13}+3u^{11}+\cdots+3u-3 \\ -u^{11}-2u^9-4u^7+u^6-5u^5+u^4-3u^3-2u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= -4u^{13}-12u^{11}-2u^{10}-29u^9-4u^8-45u^7-5u^6-45u^5-10u^4-32u^3-8u^2-11u-7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{14} + 3u^{12} + \cdots + u + 1$
c_2, c_7	$u^{14} + 6u^{13} + \cdots + 9u + 1$
c_3, c_{10}	$u^{14} + 7u^{12} + \cdots - u + 1$
c_4, c_{11}	$u^{14} - u^{13} - 3u^{10} + 3u^9 + u^8 + 2u^6 - 4u^5 - 2u^4 + u^2 + 2u + 1$
c_5, c_9	$u^{14} + 7u^{12} + \cdots + u + 1$
c_6	$u^{14} + 3u^{12} + \cdots - u + 1$
c_8	$u^{14} - 6u^{13} + \cdots - 4u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{14} + 6y^{13} + \cdots + 9y + 1$
c_2, c_7	$y^{14} + 10y^{13} + \cdots + y + 1$
c_3, c_5, c_9 c_{10}	$y^{14} + 14y^{13} + \cdots + 13y + 1$
c_4, c_{11}	$y^{14} - y^{13} + \cdots - 2y + 1$
c_8	$y^{14} - 4y^{13} + \cdots - 8y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_3	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=0.726429+0.738003I$ $a=1.33833-1.17422I$ $b=-0.584789+0.795162I$	$-0.01062-1.94202I$	$2.00932+3.37456I$
$u=0.726429-0.738003I$ $a=1.33833+1.17422I$ $b=-0.584789-0.795162I$	$-0.01062+1.94202I$	$2.00932-3.37456I$
$u=-0.653577+0.866508I$ $a=1.194500-0.206474I$ $b=0.04408+1.69162I$	$-4.68531-2.54104I$	$4.65327+4.19412I$
$u=-0.653577-0.866508I$ $a=1.194500+0.206474I$ $b=0.04408-1.69162I$	$-4.68531+2.54104I$	$4.65327-4.19412I$
$u=-0.252602+0.846708I$ $a=-1.68568-0.55564I$ $b=0.10455-1.45717I$	$-6.98963-1.12261I$	$-6.65272-1.37335I$
$u=-0.252602-0.846708I$ $a=-1.68568+0.55564I$ $b=0.10455+1.45717I$	$-6.98963+1.12261I$	$-6.65272+1.37335I$
$u=0.164460+1.120840I$ $a=-0.012063-1.300920I$ $b=0.258541-0.856843I$	$-4.52958-1.45474I$	$-11.85219+6.68999I$
$u=0.164460-1.120840I$ $a=-0.012063+1.300920I$ $b=0.258541+0.856843I$	$-4.52958+1.45474I$	$-11.85219-6.68999I$
$u=0.693530+0.982336I$ $a=-2.20489+0.21016I$ $b=0.590972+0.911227I$	$-0.76823+7.39185I$	$-0.21938-7.80771I$
$u=0.693530-0.982336I$ $a=-2.20489-0.21016I$ $b=0.590972-0.911227I$	$-0.76823-7.39185I$	$-0.21938+7.80771I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.890932 + 0.918447I$ $a = 0.287546 - 0.062061I$ $b = -0.035727 + 0.562759I$	$4.35733 - 3.27992I$	$8.77581 + 1.72593I$
$u = -0.890932 - 0.918447I$ $a = 0.287546 + 0.062061I$ $b = -0.035727 - 0.562759I$	$4.35733 + 3.27992I$	$8.77581 - 1.72593I$
$u = 0.212692 + 0.537116I$ $a = -1.91774 + 0.45936I$ $b = -0.377626 - 0.645284I$	$-2.17837 + 3.22050I$	$-4.21411 - 3.89687I$
$u = 0.212692 - 0.537116I$ $a = -1.91774 - 0.45936I$ $b = -0.377626 + 0.645284I$	$-2.17837 - 3.22050I$	$-4.21411 + 3.89687I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^9 - u^8 + \cdots + u + 1)^6)(u^{14} + 3u^{12} + \cdots + u + 1)$ $\cdot (u^{26} + 7u^{25} + \cdots + 12u + 8)$
c_2, c_7	$(u^9 + 3u^8 + 8u^7 + 13u^6 + 17u^5 + 17u^4 + 12u^3 + 6u^2 + u - 1)^6$ $\cdot (u^{14} + 6u^{13} + \cdots + 9u + 1)(u^{26} + 9u^{25} + \cdots + 48u + 64)$
c_3, c_{10}	$(u^{14} + 7u^{12} + \cdots - u + 1)(u^{26} + 8u^{24} + \cdots + 2u + 1)$ $\cdot (u^{54} - u^{53} + \cdots + 2026u + 167)$
c_4, c_{11}	$(u^{14} - u^{13} - 3u^{10} + 3u^9 + u^8 + 2u^6 - 4u^5 - 2u^4 + u^2 + 2u + 1)$ $\cdot (u^{26} - u^{25} + \cdots - 3u + 1)(u^{54} - 3u^{53} + \cdots - 88u + 7)$
c_5, c_9	$(u^{14} + 7u^{12} + \cdots + u + 1)(u^{26} + 8u^{24} + \cdots + 2u + 1)$ $\cdot (u^{54} - u^{53} + \cdots + 2026u + 167)$
c_6	$((u^9 - u^8 + \cdots + u + 1)^6)(u^{14} + 3u^{12} + \cdots - u + 1)$ $\cdot (u^{26} + 7u^{25} + \cdots + 12u + 8)$
c_8	$((u^3 + u^2 - 1)^{18})(u^{14} - 6u^{13} + \cdots - 4u^2 + 1)$ $\cdot (u^{26} - 21u^{25} + \cdots - 6912u + 512)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)^6$ $\cdot(y^{14}+6y^{13}+\cdots+9y+1)(y^{26}+9y^{25}+\cdots+48y+64)$
c_2, c_7	$(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)^6$ $\cdot(y^{14}+10y^{13}+\cdots+y+1)(y^{26}+17y^{25}+\cdots+60160y+4096)$
c_3, c_5, c_9 c_{10}	$(y^{14}+14y^{13}+\cdots+13y+1)(y^{26}+16y^{25}+\cdots-2y+1)$ $\cdot(y^{54}+39y^{53}+\cdots-756660y+27889)$
c_4, c_{11}	$(y^{14}-y^{13}+\cdots-2y+1)(y^{26}+9y^{25}+\cdots+19y+1)$ $\cdot(y^{54}-13y^{53}+\cdots-772y+49)$
c_8	$((y^3-y^2+2y-1)^{18})(y^{14}-4y^{13}+\cdots-8y+1)$ $\cdot(y^{26}-5y^{25}+\cdots+196608y+262144)$